

INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

FOR

MARINE CORPS BASE, QUANTICO, VIRGINIA

I. AUTHORITY

Per the Sikes Act Improvement Act (SAIA), Public Law 105-85, and in accordance with the authority contained in Title 10, U.S.C., Section 2671 and Title 16, U.S.C., Section 670a et seq., Marine Corps Base (MCB), Quantico, Virginia, requested the assistance of the U.S. Fish and Wildlife Service and the Virginia Department of Game and Inland Fisheries to review and update this Integrated Natural Resources Management Plan (INRMP). MCB, Quantico and its partners, through their duly designated representatives whose signatures appear below, approve the following plan in keeping with the goals and objectives set forth by the SAIA.

Charles A. Dallachie 21 Dec 06
CHARLES A. DALLACHIE Date
Colonel, U.S. Marine Corps
Commander
Marine Corps Base, Quantico

J. Carlton Courter III 03/08/07
J. CARLTON COURTER III Date
Executive Director
Virginia Department of Game
and Inland Fisheries

M. E. Moriarty Acting 4-12-07
MARVIN E. MORIARTY Date
Regional Director
U.S. Fish and Wildlife Service

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II. PLAN PREPARATION

The Natural Resources and Environmental Affairs Branch, G-5 (Facilities Division), Marine Corps Base, Quantico, prepared this INRMP by updating the previous version, which was valid for fiscal years 2002-2006. This INRMP, for fiscal years 2007-2011, reflects minor changes which do not result in any biophysical consequences materially different from those realized over the past 5-years of INRMP implementation. Consultation with the following billets and organizations was instrumental in updating this plan. The Virginia Field Office of the U.S. Fish and Wildlife Service, a long-time cooperator and participant in natural resources management at MCB, Quantico, was unable to participate in this update process due to staffing/workload conflicts. They remain a dedicated partner on Endangered Species Act, Section 7, consultations.

AC/S G-5 (Facilities Division)
AC/S G-4 (Logistics Division)
AC/S G-3 (Operations Division)
Director, Comptroller Division
Counsel, Commanding General
Commanding General, Training and Education Command
Community Planning Liaison Officer
Head, Range Management Branch
Director, Safety Division
Commanding Officer, Security Battalion
Director, Marine Corps Community Services Division
Public Affairs Office
Head, Public Works Branch
Head, Fire Protection/Prevention Branch
Prince William Forest Park, National Park Service
Virginia Department of Game and Inland Fisheries

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B	MCBO P11015.2A, FISH AND WILDLIFE MANAGEMENT PROCEDURAL MANUAL
C	MAPS OF MANAGED OPENINGS IN TRAINING AREAS
D	SPECIES LISTS FOR MARINE CORPS BASE, QUANTICO

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CHAPTER 1

INTRODUCTION

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CHAPTER 1

INTRODUCTION

1000. PURPOSE

1. Per the Sikes Act Improvement Act (SAIA), 16 U.S.C. 670 et. seq., Department of Defense Instruction 4715.3, and Marine Corps Order P5090.2A, this Integrated Natural Resources Management Plan (INRMP) has been prepared as a planning document that directs management and conservation of natural resources while meeting the mission of Marine Corps Base (MCB) Quantico. Management actions identified in the INRMP provide for the following:

a. No net loss in the capability of military installation lands to support the military mission of the installation.

b. Fish and wildlife management, land management, forest management, outdoor recreational management and environmental restoration.

c. Fish and wildlife habitat enhancement or modifications.

d. Wetland protection, enhancement, and restoration.

e. Integration of and consistency among, the various activities conducted under the plan.

f. Establishment of specific natural resource management goals and objectives and time frames for proposed actions.

g. Sustainable use by the public of natural resources to the extent that the use is not inconsistent with the military mission and the needs of the fish and wildlife resources.

h. Public access to the military installation subject to military mission requirements, safety and military security.

i. Enforcement of applicable natural resources laws and regulations.

j. Such other activities as the Secretary of the military department determines appropriate.

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2. This INRMP replaces the MCB INRMP completed December 3, 2001, and is valid for the period October 2006 through September 2011.

1001. MISSION. MCB, Quantico, is located approximately 35 miles southwest of Washington, D.C. (Figure 1-1). The Base is the home of the Marine Corps Combat Development Command (MCCDC), which develops the doctrine, tactics, technique, equipment, training and education employed by the Marine Corps in all warfighting areas. Per the Base Master Plan, MCB is tasked with providing functional support for the execution of the overall MCCDC mission. This includes personnel administration, facilities, logistics, financial, security, safety, public information, legal, base operations, training, morale, welfare, and recreation support for organic and tenant organizations.

1002. ORGANIZATION AND RESPONSIBILITIES

1. The Assistant Chief of Staff, G-5 (Facilities Division), has overall cognizance for the development and management of the natural resources and environmental programs.

2. The Head, Natural Resources and Environmental Affairs (NREA) Branch, has primary responsibility for implementing the Command's natural resources and environmental programs. The NREA Branch consists of six operating sections and an administrative and support section; the organizational chart for the Branch is provided at Figure 1-2. Functional responsibilities and programs managed by the Sections are described on the MCB website at:

<http://www.quantico.usmc.mil/display.aspx?Section=NREA>

3. Outdoor recreation programs that require highly developed facilities are the responsibility of the Director, Marine Corps Community Services (MCCS) Division.

1003. DRIVERS, GOALS AND PROJECTS

1. The Marine Corps INRMP Handbook recommended organizing the INRMP in a progression of drivers, goals and projects as the means to develop natural resources management courses of action. Drivers are the primary functional areas that must be addressed to achieve legal compliance and safeguard the capability of the lands to support training. Goals establish achievable and realistic management courses of action within each driver. Projects are the individual actions required to accomplish the goals.

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2. Drivers, goals, and projects for this INRMP are listed at Table 1-1. Chapters 3-9 of the INRMP provide background information pertinent to the need for and consequences of implementing the projects, along with estimated timelines and budgets. Projects are prioritized "A" (Class I) for continuation of existing programs and actions that can be done with existing resources. "B" (Class II) and "C" (Class III) projects increase the overall program effectiveness and require increased funding and/or manpower.

1004. ACTION. This INRMP, updated for fiscal years 2007-2011, reflects the continuation of natural resources management programs under the existing INRMP. Per DoD guidance, new NEPA documentation is not considered necessary since this INRMP only incorporates minor changes which are not expected to result in any biophysical consequences materially different from those realized from the previous 5-years of INRMP implementation. Per 2005 correspondence, the U.S. Fish and Wildlife Service and the Virginia Department of Game and Inland Fisheries both agreed that MCB could update the existing INRMP rather than execute a major revision. An Environmental Assessment on the implementation of this INRMP was approved in 2001 to implement priority A projects. The completion of priority B and C projects is optional depending upon the availability of funding and/or manpower.

1005. FUNDING SOURCES

1. Primary funding sources for INRMP programs are:

a. Base Operation and Maintenance (O&M,MC): Fund Administrator FE, FV (conservation), FX (compliance) and FY (pollution prevention).

b. Funds derived from the sale of forest products (H2).

c. Funds derived from the sale of MCB hunting, fishing and trapping permits (H6A15).

d. Environmental Restoration Navy (ERN) funds.

2. Marine Corps Community Services programs are supported by the Headquarters Marine Corps Non-appropriated Funds (NAF), Appropriated Quality of Life Funds (APF), and from funds generated by the operation of their facilities.

3. A budget summary is provided at Chapter 10.

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Table 1-1: List of INRMP Drivers, Goals and Projects. "A" priority (PRTY) indicates compliance level and continuation of existing projects. "B" and "C" projects provide a more comprehensive approach to natural resources and environmental management.

DRIVER, GOALS AND PROJECTS	PRTY
DRIVER I: TO PRESERVE, DEVELOP AND MANAGE LAND AND WATER RESOURCES CONSISTENT WITH AND IN SUPPORT OF THE MARINE CORPS MISSION AND IN ACCORDANCE WITH PROVEN SCIENTIFIC METHODS AND APPLICABLE FEDERAL, STATE AND LOCAL LAWS/REGULATIONS.	
1. Goal: To comply with the Clean Water Act and the Chesapeake Bay preservation initiatives by identifying, monitoring and mitigating actions that cause land disturbance and/or the release of pollutants.	
1. Collect water quality data from South Fork Quantico Creek as required by watershed agreement with the Department of the Interior.	A
2. Collect water quality data from other on-base streams to monitor pollutant loads in keeping with Chesapeake Bay preservation initiatives.	A
3. Collect water quality data from permitted NPDES outfalls.	A
4. Monitor construction projects to ensure that Virginia erosion and sediment control regulations are being implemented and provide educational guidance for personnel responsible for mitigation measures.	A
5. Mitigate wetlands losses through site-specific projects to create new wetlands or by purchase of credits from a Wetlands Mitigation Bank.	A
6. Measure sedimentation depth in Lunga and Breckenridge Reservoirs to evaluate dredging needs or potable water impacts.	C
7. Install 250 meters of vegetated buffers or engineer-designed structure to protect shorelines and riparian zones.	B
8. Patrol and enforce Off-Road Vehicle (ORV) restrictions. Physically block access and stabilize hillside gullies formed by ORV's in the Chopawamsic Creek watershed, especially near Breckenridge Dam.	B
9. Increase shoreline/riparian protection measures to 500 meters.	C
2. Goal: To maintain a source of inquiry, inspection and record reporting for pesticide use and coordinate eradication programs for protection of natural resources.	
10. Maintain an updated Pest Management Plan and coordinate assimilation and distribution of incoming and outgoing pesticide information with the NAVFACENGCOM, ATLANTIC.	A
11. Maintain record of on-base personnel with pesticide training, respond to inquiries on pesticide use and make required inspections to evaluate pesticide use and storage by MCB and tenant organizations.	A
12. Develop an integrated pest management plan for identification, evaluation and control of invasive plant species.	A
3. Goal: To evaluate and coordinate multiple land use activities without degrading natural resources or impacting the military mission.	
13. Update the Land Management Plan.	A
14. Update the land-use constraints map.	A

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DRIVER, GOALS AND PROJECTS	PRTY
15. Update the INRMP.	A
16. Develop Base-wide master plant list as a guide in the BEAP for landscape plantings and invasive plant controls.	A
17. Determine long-term trends to soil disturbance and land cover in intensively used training areas by periodic monitoring of special Land Condition Trend Analysis (LCTA) plots.	A
18. Form Integrated Training Area Management (ITAM) task force to identify land maintenance requirements, develop scope of work for projects to correct the deficiencies, execute the projects as resources become available, and evaluate the effectiveness of completed projects.	B
19. Produce geologic profile map to identify areas where fault lines, rock formations, high water table and soil characteristics could hinder development.	C
4. Goal: To systematically improve Geographic Information System (GIS) and the Global Positioning System (GPS) techniques in maintaining natural resources databases and producing map products for the purpose of making informed decisions about natural and cultural resources.	
20. Update existing GIS coverages for physical changes to the environment (i.e. road revisions, construction or demolition of buildings, range revisions, etc.) to improve accuracy of maps.	A
21. Increase positional accuracy for important structural and natural features using GPS technology.	A
22. Provide a 1:200 scale, digitized, ortho-corrected aerial Base map in color and update every 5 years.	B
DRIVER II: TO SUPPORT AND ENHANCE THE PRESERVATION OF ALL ANIMAL AND PLANT LIFE ENDEMIC TO THE BASE ECOSYSTEM WITH SOUND MANAGEMENT PRACTICES THAT MEET THE REQUIREMENTS OF ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS/REGULATIONS.	
1. Goal: To provide for the stewardship of fish and wildlife resources by managing the soil, water, vegetation and other natural features to sustain and ensure for future uses quality habitats and diversified biological communities.	
23. NEPA review of land disturbing projects to evaluate impacts on fish and wildlife populations	A
24. Conservation plantings (150 acres per year): use agronomic practices to manage grasslands to support military training, produce grassland wildlife habitat, and stabilize soils.	A
25. Promote recreational fisheries by placement of habitat structure in impoundments.	A
26. Aquatic Habitat Protection: point and non-point source pollution abatement (see drivers I and IV).	A
27. Horticulture: maintain 700 fruit and nut trees in old orchards and	A

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DRIVER, GOALS AND PROJECTS	PRTY
homesites for aesthetic values and mast production.	
28. Prescribed Burning: see goal #8.	A
29. Nest Structures: install boxes for bluebirds, kestrels, wood ducks, and other wildlife where appropriate.	A
30. Plant impoundment shorelines with moist soil plants during summer draw-downs.	A
31. Conservation equipment: procure, lease, rent, maintain and operate chain saws, boats, tractors, heavy equipment, implements, attachments, communication equipment, and tools necessary to carry out INRMP projects done by staff personnel.	A
32. Increase conservation plantings to 250 acres per year.	B
33. Increase conservation plantings to 350 acres per year.	C
2. Goal: To promote the preservation and recovery of endangered, threatened and declining native species.	
34. Coordinate with USFWS and state agencies on any projects that may affect T&E species.	A
35. Locate and monitor bald eagle nests and mark nest protection zones.	A
36. Monitor dwarf wedgemussel population in Aquia Creek in 2008.	A
37. Annually visit all small whorled pogonia (SWP) colonies to count the number of stems and flowers and mark protection zones as needed.	A
38. Conduct SWP surveys of all forested lands prior to land disturbances. Survey results are required for every project that has potential to disturb forest habitat.	A
39. SWP Ecology Study. Collect micro-habitat data and exact stem locations over at least a 10-year period to study SWP dormancy and how colonies change over time in response to ecological conditions.	C
3. Goal: To promote the proper use and protection of fish and wildlife resources through aggressive law enforcement, hunter safety and environmental protection training.	
40. Enforce all Virginia, MCB and federal fish and game laws and issue citations and/or suspensions to violators of those regulations. Debar habitual violators from further access to MCB for fishing and hunting recreation.	A
41. Hunter Safety Training. Operate MCB hunter orientation program and support on-Base classes of the Virginia Hunter Safety course.	A
4. Goal: To professionally monitor projects and programs, and directly or indirectly, gather data beneficial to the conservation and management of fish and wildlife.	
42. Oak Mast Count. Conduct acorn count per VDGIF protocol to provide annual index of this important wildlife food source.	A
43. Fisheries Surveys. Survey Base impounded waters to maintain database of game fish populations.	A
44. Turkey population census. Conduct spring gobbler index count and compile summer brood sightings.	A
45. Big Game Harvest Data. Maintain database files of deer and turkey	A

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DRIVER, GOALS AND PROJECTS		PRTY
	harvest records useful in assessing long-term trends in herd and flock health parameters.	
46.	Bobwhite Quail Call Count. Conduct annual quail call count in support of VDGIF state-wide survey. Conduct base-wide call count survey to map quail presence/absence.	A
47.	Deer Population Counts. Conduct snow track count and post-hunt night-lighting surveys to provide long-term index of deer herd size.	A
48.	Beaver Census. Conduct base-wide beaver inventory every four years.	A
49.	Operate stations to monitor avian production and survival (MAPS).	A
50.	Monitor the relative abundance and distribution of submerged aquatic vegetation in tidal waters and impoundments.	A
51.	Monitor Invasive Species. Develop index of quantitative measure of the presence of invasive species such as tall fescue, autumn olive and phragmites to monitor effectiveness of control efforts.	A
52.	Ecosystem Studies. Conduct research to monitor impact of on and off-base actions on the maintenance of MCB natural communities.	B
53.	Fishing Creel Survey. Conduct field interviews and creel checks to evaluate the utilization of Base waters and angling success.	B
54.	Furbearer Scent Station Index. Operate 100-station route twice annually to maintain index of mammalian predator populations.	B
55.	Cooperate with VDGIF to monitor for diseases such as CWD, EHD, and avian influenza, and respond per state management guidelines.	A
5.	Goal: To control damage to human health, property, or natural communities by controlling damage due to the overpopulation or encroachment of flora and fauna.	
56.	Control invasive plant species. Implement integrated pest management program to control and/or eradicate tall fescue, autumn olive, or other invasive plants.	A
57.	Resident Canada Goose. Apply lethal and non-lethal measure authorized by USDA APHIS, USDI and VDGIF to reduce/control resident goose populations near recreational facilities and air facilities.	A
58.	Beaver Control. Apply lethal and non-lethal controls to reduce site specific flooding of roads and training facilities.	A
59.	Terrestrial mammal control. Apply lethal and non-lethal controls for ground hogs, coyotes, foxes, skunks, raccoons and opossums as necessary to reduce property damage, disease, or other problems caused by furbearing mammals.	A
60.	Install deer bait stations to transmit pesticides to ticks to reduce tick populations and tick-borne human pathogens.	C
6.	Goal: To perpetuate a diverse forest environment that fulfills the requirements for military training; sustains the yield of forest products; identifies and controls potential forest insect and disease problems; maintains healthy forest ecosystems; and provides for a diversity of animal and plant species.	

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DRIVER, GOALS AND PROJECTS	PRTY
61. Forest Management Planning and Administration.	A
62. Complete NEPA requirements for Forestry Projects.	A
63. Review NEPA projects affecting forest resources.	A
64. Evaluate and treat 3-7 forest compartments per year for forest health maintenance.	A
65. Complete forest road access improvements.	A
66. Timber sale contract preparation, advertisement, and administration.	A
67. Complete annual site preparation and reforestation requirements	A
68. Forest Insect and disease management	A
69. Monitor natural environmental damages to the forest resource.	A
70. Urban forest management	A
71. Fire management.	A
72. Maintain forestry equipment	A
73. Equipment replacement (bulldozer)	B
74. Develop a forest management brochure.	B
75. Control invasive species in new pine plantations.	B
76. Label Base Champion Trees with identification tags.	B
77. Plant additional species of native plants, shrubs and trees on Arboretum Trailheads and parking areas.	C
78. Develop additional educational/recreational trails or picnic areas around Base Champion Trees.	C
79. Pre-commercially thin/release 10-20 acres annually.	C
7. Goal: To provide for the management and control of wildfires from military training exercises through an aggressive fire management program that: establishes a fire danger classification system to assess fire potential; provides for an adequate firebreak system around areas with high fire incidence; provides for safe and effective fire suppression by personnel who are competently trained; and minimizes the likelihood that fires will escape from Base lands to surrounding private property.	
80. Maintain fire danger classification system.	A
81. Complete MCB firebreak system. Inspect for maintenance needs.	A
82. Maintain wildfire control directive and capability for fire suppression.	A
83. Serve as co-incident commander and resource protection advisor on wildfire suppression/control activities.	A
84. Ensure that proper safety procedures are followed at all times.	A
85. Provide training for NREA fire suppression personnel.	A
86. Maintain and replace fire suppression equipment	A
87. Reduce fuel loading near developed areas on Base perimeter.	B
88. Purchase equipment for real-time field mapping of fire incidents.	B
89. Develop a Base GIS fuel model coverage.	B
90. Develop a fuel risk coverage.	B
8. Goal: To provide for managed application of fire to meet forest management, wildlife management, fire maintained ecosystem requirements and reduce the intensity and frequency of fires on open range and forested areas with high ignition sources.	
91. Coordinate Base prescribed burning program and ensure that established procedures are followed.	A
92. Provide input for review/update of MCBO 6240.5A.	A

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DRIVER, GOALS AND PROJECTS	PRTY
93. Assess fuel conditions in training areas and implement appropriate actions to manage fuel loading.	A
94. Comply with Virginia Certified Prescribed Burning Manager Program.	A
95. Prepare the annual prescribed burning plan to meet all Base burning requirements by 1 February.	A
96. Ensure personnel involved in prescribed burning are provided with proper protective equipment and clothing.	A
DRIVER III: TO PRESERVE AND DEVELOP AN OUTDOOR RECREATIONAL PROGRAM THROUGH CREATIVE MANAGEMENT PRACTICES THAT WILL INCORPORATE AND PROMOTE BASE ORGANIZATIONAL PARTICIPATION AND ESTABLISH COOPERATIVE AGREEMENTS FOR MUTUAL RECREATIONAL BENEFITS.	
1. Goal: To systematically emphasize and develop outdoor recreational programs within the constraints of the military mission and the capability of Base natural/cultural resources to provide for the enjoyment of military personnel and the general public.	
97. Operate Lunga Park and the Marina to support camping, picnicking, and boating activities.	A
98. Manage programs for gathering of firewood and holiday greenery for personal use.	A
99. Complete Breckinridge Reservoir Recreation Plan per MOA with Prince William Forest Park.	A
100. Maintain dams and spillways of impounded waters.	A
101. Maintain vehicle and boating access to impounded waters.	A
102. Develop joint interpretive programs for guided bird walks.	B
103. Develop map and policy detailing availability of all trail facilities, e.g., non-motorized bicycling (on or off-road), horseback riding, hiking, nature study and jogging.	A
104. Gray's Reservoir and Chopawamsic Creek weirs: conduct feasibility study to dredge reservoir and repair or demolish the weirs.	B
105. Repair Marina pier-head.	B
106. Repair utility infrastructure at Lunga Park.	A
107. Develop shower and bath facility for Lunga campers.	B
108. Post signage and boundaries to identify recreation areas/facilities and lands/waters off-limits or having restricted access.	A
109. Maintain 150 miles of trails in training areas for hunter access, resource inventory, natural resources management, etc.	A
2. Goal: To promote the morale and welfare of personnel assigned to the installation and support public access, to the extent allowed by mission constraints, by providing for recreational needs related to hunting, fishing, wildlife viewing and natural history study.	
110. Revise, print and disseminate directives and maps concerning hunting and fishing opportunities.	A
111. Maintain special MCB fishing, hunting and woodcutting license sales and use of funds in keeping with SAIA and other directives.	A
112. Operate Game Checking Station during hunting seasons (7 months per year) to provide for license sales and control of hunting	A

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DRIVER, GOALS AND PROJECTS	PRTY
activities in coordination with other land uses.	
113. Maintain Arboretum Trails, Wildlife Viewing Area, and Wisdom Tree for appreciation and enjoyment of visitors.	A
114. Maintain and continue to upgrade facilities to provide wheelchair accessibility to fishing, hunting and boating programs.	A
115. Conduct fish stocking as approved by the VDGIF and USFWS to support recreational fisheries.	A
116. Maintain Secon Pool for special youth fishing program.	A
117. Conduct angler recognition program.	B
118. Maintain and license waterfowl hunting blinds for public access.	A
119. Operate conservation volunteer program.	A
120. Operate Game Checking Station 12 months per year to provide consistent visitor access to interpretive displays, outdoor recreation information, and license sales.	B
3. Goal: To promote public relations and education through proper media management, housekeeping and display of natural resources.	
121. Participate in scout, career-day, garden club, or other civic group programs to provide information about MCB natural resources.	A
122. Maintain current web-sites and telephone answering systems concerning programs, events, seasons, and license sales locations.	A
123. Grounds keeping: ensure grounds are maintained at public facilities.	A
124. Replace Game Checking Station, building 5-9. Provide adequate space for environmental training center and to improve interpretive displays of wildlife, forest product, and cultural resources.	B
125. Pave hunter parking lot at building 27007.	B
126. Replace roof/siding and provide electrical supply and lighting at buildings 27132 and 27009.	B
127. Sponsor outside programs, such as live animals programs by Wildlife Center of Virginia, to provide on-site wildlife education programs.	C
128. Promote establishment of wildlife/butterfly gardens in cooperation with science programs at Dependent Schools and VDGIF's Project Wild.	C
DRIVER IV: TO IDENTIFY AND EVALUATE SOURCES OF ENVIRONMENTAL POLLUTION AND INCORPORATE MITIGATION MEASURES FOR RESTORATION OF AFFECTED NATURAL RESOURCES THAT MEET THE REQUIREMENTS OF ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS/REGULATIONS.	
1. Goal: To evaluate and coordinate the installation of preventive methods to reduce and/or eliminate the potential release of pollutants that would be hazardous to the environment by impacting the soil, water or air.	
129. Update and maintain the Combined Spill Plan and conduct Preparedness for Response Exercise Program training as an integral part of the Spill Prevention and Control Program.	A
130. Coordinate reduction of hazardous waste volume and toxicity by exercising pollution prevention measures and by updating the Pollution Prevention (P2) Plan.	A

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DRIVER, GOALS AND PROJECTS	PRTY
131. NREA and Base Safety to develop regulation concerning the acquisition and transport of hazardous materials at MCB.	B
132. Develop proactive approach in preventive maintenance of drainage systems through inspection, labeling of drains and an instructional awareness program.	B
133. Improve response time to spills by Base personnel and private contactors.	B
134. Inspect and maintain permanent storm water BMP's to ensure proper water quality and quantity control.	A
135. Develop educational materials and programs to ensure public education and awareness of storm water issues is addressed.	B
136. Complete detailed survey of the storm, industrial and sanitary sewer systems west of I-95 to determine whether there are illicit connections, cross-connections or other improper discharges into any of the systems.	C
137. Maximize reduction of the spill response time by acquiring additional air and skimmer boats and recovery booms with supportive equipment and trained personnel.	C
138. Include implementation of the Hazardous Materials Pharmacy Program with the established itemized procedural method for reduction of waste volume and toxicity.	C
2. Goal: To comply with regulations as required by the Clean Air Act (CAA), Comprehensive Response Compensation and Liability Act (CERCLA)/Installation Restoration Program (IRP), and Resource Conservation and Recovery Act (RCRA), and Department of the Navy orders regarding the Military Munitions Response Program (MMRP) to survey, identify, record and report sources of contamination	
139. Coordinate, implement, and complete required action for the closure and post closure care of RCRA sites at landfills and C-Demo.	A
140. Remedy in place on IR sites	A
141. Complete Military Munitions Response Program (MMRP) site investigations w/ FY06 funding.	A
142. Complete 3 MMRP Remedial Investigations per year.	A
143. Maintain the implementation of the petroleum above and underground storage tank management programs through continuous update of the Petroleum Storage Tank Management Plan and recurring training.	A
144. Coordinate, implement, and maintain the ongoing air emissions inventory, monitoring and reporting program for all regulated sources.	A
145. Include the implementation of a refrigerant service and an accountability-tracking program for all refrigeration, air-cooling and automotive air conditioning equipment.	A
146. Include a petroleum tank maintenance program which mandates the identification of deficiencies and appropriate corrective actions; the upkeep of tank appurtenances and peripherals; tank operator/owner training; and other required actions that conform to prevailing petroleum tank regulations.	A
147. Implement a multifaceted water conservation program with emphasis on the use of water in industrial processes; the reduction of the generation of wastewater flows; and the operation and maintenance	B

INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

Table 1-1: List of INRMP Drivers, Goals and Projects. "A" priority (PTY) indicates compliance level and continuation of existing projects. "B" and "C" projects provide a more comprehensive approach to natural resources and environmental management.

DRIVER, GOALS AND PROJECTS	PTY
of equipment and devices installed on the waste distribution systems.	
148. Implement the use of sewage holding tanks or septic systems at recreational and training areas where sanitary sewer systems are unavailable.	C

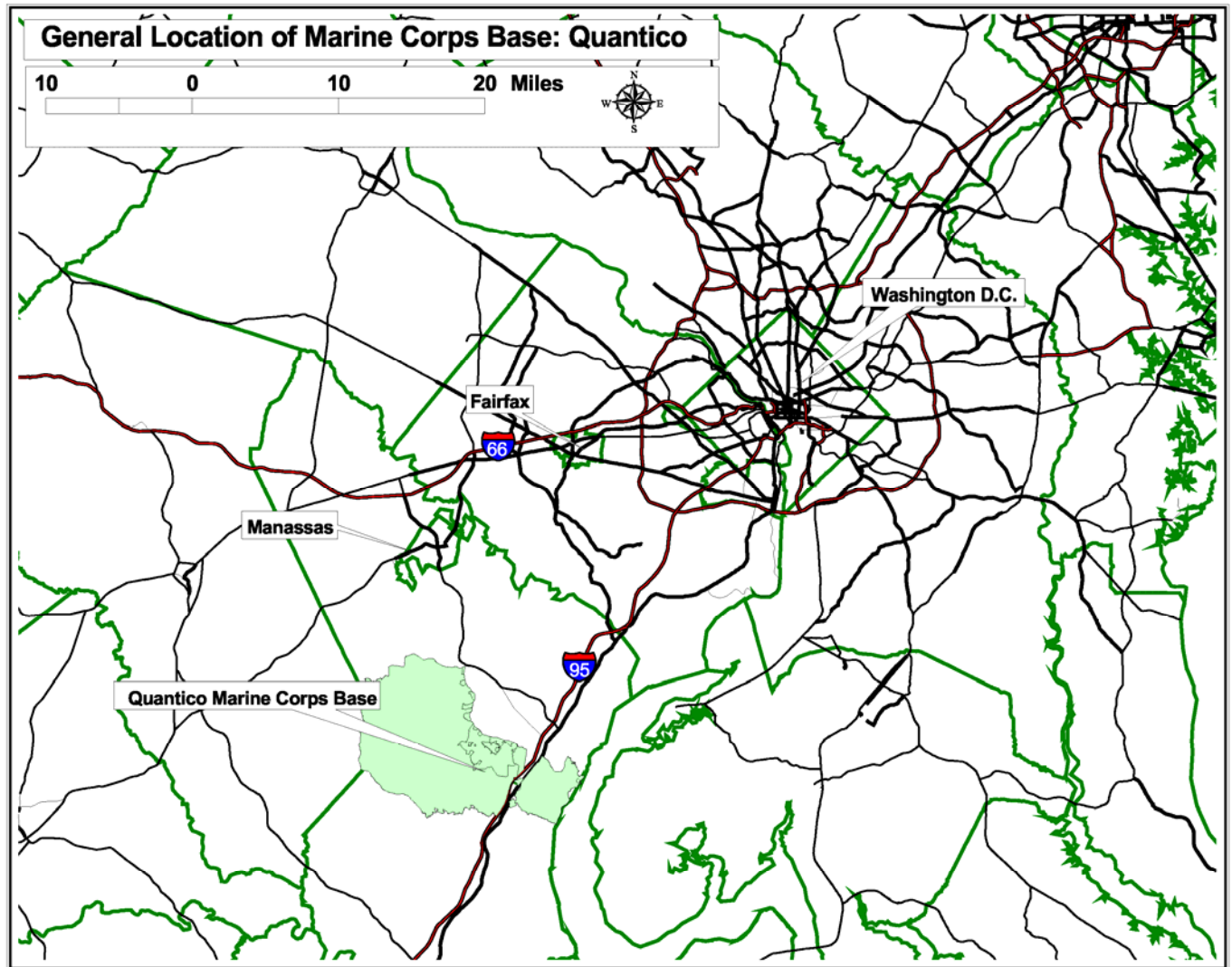


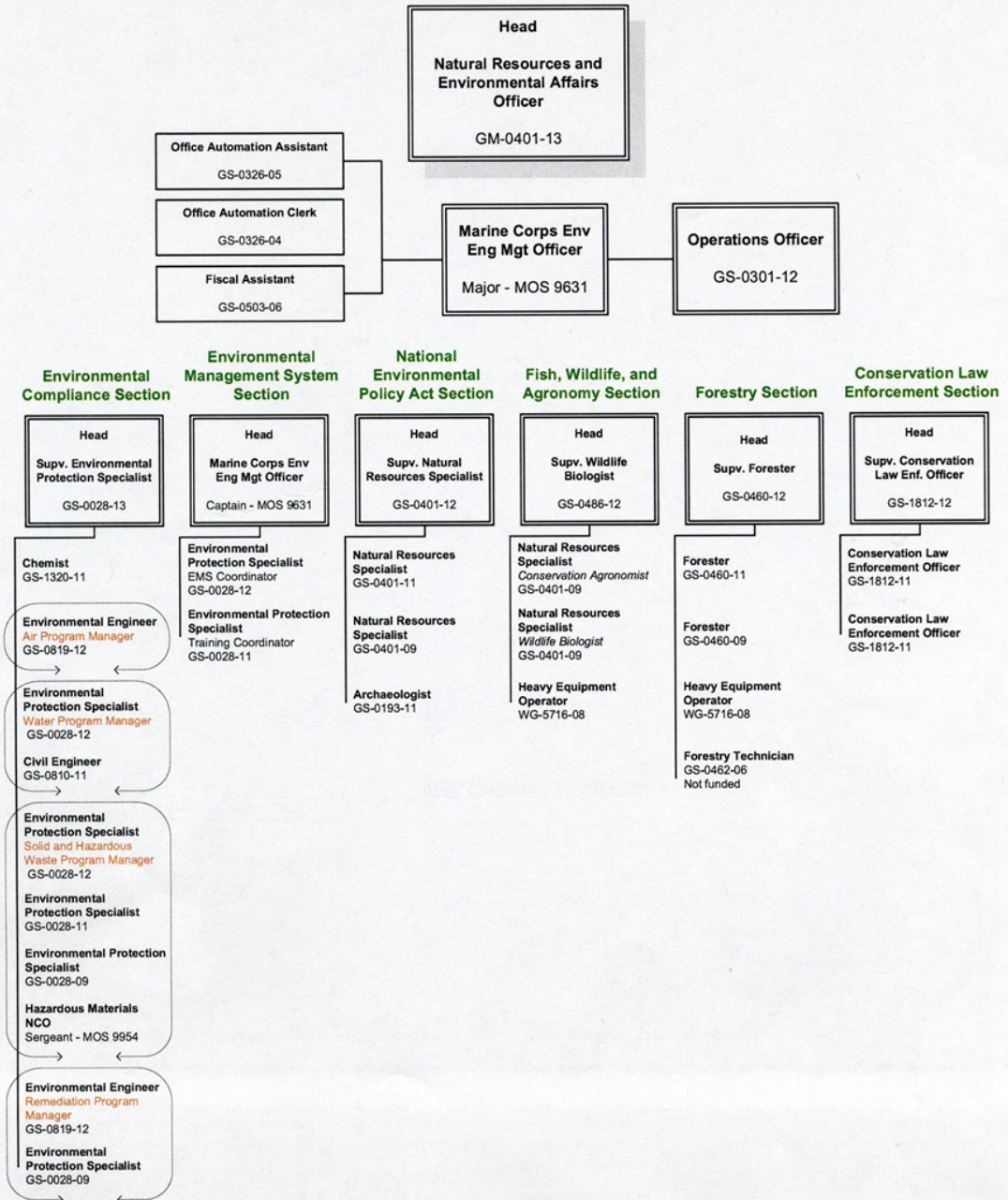
Figure 1-1.--Location of Marine Corps Base, Quantico

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INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

Natural Resources and Environmental Affairs Branch

Staffing Based on Current Table of Organization (January 2006)



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